AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A process for designing optically coherent multilayered film-coated powder, which comprises base particles having thereon at least two coated layers having refractive indexes different from each other, and reflects light with a particular wavelength, the process being characterized by:

selecting a substance of the base particles providing an intended function, and an intended color;

measuring a spectral intensity curve and values L*0, a*0 and b*0 in CIELAB color system of the intended color; and

with substances capable of being used as the coated layers and refractive indexes thereof being included in factors, obtaining substances and thicknesses of the coated layers and an order of formation of the layers that provide optically coherent multilayered film-coated powder having such values L*1, a*1 and b*1 that minimizes a color difference (ΔZ*) expressed by the following equation (3):

$$\Delta Z^* = \left| (L^*_0 - L^*_1)^2 + (a^*_0 - a^*_1)^2 + (b^*_0 - b^*_1)^2 \right|^{1/2} \qquad (3)$$

and makes a hue ratio expressed by the following equation (4):

$$(a^*_0/b^*_0)/(a^*_1/b^*_1) \qquad (4)$$

~~proximate to 1,~~within a range of from 0.9 to 1.1,

based on the following recurring formula (1) in case where the base particles have a flat plate form:

$$R_{j+1,j} = \frac{r_{j+1,j} + R_{j,j-1}\exp(-2i\delta_j)}{1 + r_{j+1,j}R_{j,j-1}\exp(-2i\delta_j)}$$

(1)

$$2\delta_j = \frac{4\pi}{\lambda} n_j d_j \cos\phi_j$$

wherein

$R_{j+1,j}$: an amplitude reflection intensity between a j-th layer from the bottom and a layer immediately thereon,

j: an integer of at least 1 (j-1=0 represents substance)

i: an imaginary unit,

$r_{j+1,j}$: a Fresnel reflection coefficient between a j-th layer from the bottom and a layer immediately thereon,

$R_{j,j-1}$: an amplitude reflection intensity between a (j-1)-th layer from the bottom and a layer immediately thereon,

$2\delta_j$: a phase difference at a j-th layer from the bottom,

λ: an intended wavelength of reflected light,

n_j: a refractive index of the j-th layer from the bottom,

d_j: a thickness of the j-th layer from the bottom, and

ϕ_j: an incident angle of light on the j-th layer from the bottom, and

as an equation for compensating a shape of the base particles, based on a visible light reflection waveform obtained by applying a R_{flat} value obtained by substituting the recurring formula (1) to the following equation (2)

$$R(\lambda) = \int_0^{\frac{\pi}{2}} \sin 2\theta \cdot R_{flat}(\lambda,\theta) \cdot d\theta \qquad (2)$$

wherein

θ: an incident angle on an outermost layer.

2. (canceled).

3. (original): The process for designing optically coherent multilayered film-coated powder according to claim 1, characterized in that substances and thicknesses of the coated layers and an order of formation of the layers are obtained that provide optically coherent multilayered film-coated powder having such values L^*_1, a^*_1 and b^*_1 that make the color difference (ΔZ^*) expressed by the equation (3) within a range of 100 or less.

4. (original): The process for designing optically coherent multilayered film-coated powder according to claim 3, characterized in that substances and thicknesses of the coated layers and an order of formation of the layers are obtained that provide optically coherent multilayered film-coated powder having such values L^*_1, a^*_1 and b^*_1 that make the color difference (ΔZ^*) expressed by the equation (3) within a range of 50 or less.

5. (original): The process for designing optically coherent multilayered film-coated powder according to claim 1, characterized in that the process is carried out by simulation using a computer.

6. (currently amended): A process for producing optically coherent multilayered film-coated powder, which comprises base particles having thereon at least two coated layers having refractive indexes different from each other, and reflects light with a particular wavelength, the process being characterized by:

selecting a substance of the base particles providing an intended function, and an intended color;

measuring a spectral intensity curve and values L^*_0, a^*_0 and b^*_0 in CIELAB color system of the intended color;

with substances capable of being used as the coated layers and refractive indexes thereof being included in factors, obtaining substances and thicknesses of the coated layers and an order of formation of the layers that provide optically coherent multilayered film-coated powder having such values L^*_1, a^*_1 and b^*_1 that minimizes a color difference (ΔZ^*) expressed by the following equation (3):

$$\Delta Z^* = \left| (L^*_0-L^*_1)^2 + (a^*_0-a^*_1)^2 + (b^*_0-b^*_1)^2 \right|^{1/2} \qquad (3)$$

and makes a hue ratio expressed by the following equation (4):

$$(a^*_0/b^*_0)/(a^*_1/b^*_1) \qquad (4)$$

~~proximate to 1,~~within a range of from 0.9 to 1.1,

based on the following recurring formula (1) in case where the base particles have a flat plate form:

$$R_{j+1,j} = \frac{r_{j+1,j} + R_{j,j-1}\exp(-2i\delta_j)}{1 + r_{j+1,j}R_{j,j-1}\exp(-2i\delta_j)}$$
$$2\delta_j = \frac{4\pi}{\lambda} n_j d_j \cos\phi_j \qquad (1)$$

wherein

$R_{j+1,j}$: an amplitude reflection intensity between a j-th layer from the bottom and a layer immediately thereon,

j: an integer of at least 1 (j-1=0 represents substance)

i: an imaginary unit,

$r_{j+1,j}$: a Fresnel reflection coefficient between a j-th layer from the bottom and a layer immediately thereon,

$R_{j,j-1}$: an amplitude reflection intensity between a (j-1)-th layer from the bottom and a layer immediately thereon,

$2\delta_j$: a phase difference at a j-th layer from the bottom,

λ: an intended wavelength of reflected light,

n_j: a refractive index of the j-th layer from the bottom,

d_j: a thickness of the j-th layer from the bottom, and

ϕ_j: an incident angle of light on the j-th layer from the bottom, and

as an equation for compensating a shape of the base particles, based on a visible light reflection waveform obtained by applying a R_{flat} value obtained by substituting the recurring formula (1) to the following equation (2):

$$R(\lambda) = \int_0^{\frac{\pi}{2}} \sin 2\theta \cdot R_{flat}(\lambda, \theta) \cdot d\theta \qquad (2)$$

wherein

θ: an incident angle on an outermost layer;

and

providing the coated layers on the base particles thus selected, according to the substances and the thicknesses of the coated layers and the order of formation of the layers thus obtained.

7. (canceled).

8. (original): The process for producing optically coherent multilayered film-coated powder according to claim 6, characterized in that substances and thicknesses of the coated layers and an order of formation of the layers are obtained that provide optically coherent

multilayered film-coated powder having such values L^*_s, a^*_s and b^*_s that make the color difference (ΔZ^*) expressed by the equation (3) within a range of 100 or less.

9. (original): The process for producing optically coherent multilayered film-coated powder according to claim 8, characterized in that substances and thicknesses of the coated layers and an order of formation of the layers are obtained that provide optically coherent multilayered film-coated powder having such values L^*_s, a^*_s and b^*_s that make the color difference (ΔZ^*) expressed by the equation (3) within a range of 50 or less.

10. (original): The process for producing optically coherent multilayered film-coated powder according to claim 6, characterized in that substances and thicknesses of the coated layers and an order of formation of the layers are obtained by simulation using a computer.

11. (canceled).

12. (canceled).

13. (canceled).

14. (canceled).

15. (canceled).